

AMENDMENTS TO THE DRAWINGS

The attached "Replacement Sheet" of drawings includes changes to Figures 11A and 11B. The attached "Replacement Sheet," which includes Figures 11A-12, replaces the original sheet including Figures 11A-12.

In Figures 11A and 11B the term "Prior Art" has been added.

Attachment: Replacement Sheet

REMARKS

Claims 1-7 and 10-15 remain pending in the present application. Claims 8 and 9 have been cancelled. Claims 1, 5 and 11 have been amended. Basis for the amendments can be found throughout the specification, claims and drawings as originally filed.

DRAWINGS

Figures 11A and 11B should be designated by a legend such as –Prior Art – because only that which is old is illustrated. The drawings have been amended to overcome the objection. Withdrawal of the objection is respectfully requested.

CLAIM OBJECTIONS

Claims 5 and 11 are objected to because of the following informalities: lines 5-6, “the said” should be changed to --said--. The claims have been amended to overcome the objection. Withdrawal of the objection is respectfully requested.

REJECTION UNDER 35 U.S.C. § 103

Claims 1-2 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Murtojarvi (U.S. Pat. No. 6,668,162) in view of Carroll (U.S. Pat. No. 5,130,571). Claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Murtojarvi in view of Carroll, as applied to Claim 1 above, and further in view of Carlton, et al. (U.S. Pat. No. 4,253,057). Claim 1 has been amended to define a first transistor connected to an anode side of the diode, the first transistor working as a constant current source for

supplying a constant current to the anode side of the diode by a positive potential being applied thereto. Also, Claim 1 has been amended to define a second transistor inserted between a cathode side of the diode and ground, the second transistor working as a constant current source for removing a constant current from a current outputted from the cathode side of the diode by a positive potential being applied thereto.

The Examiner stated in the Office Action that Murtojarvi discloses in Fig. 4C a circuit comprising a device (D3C) working as a diode, a first high resistance device (R12) connected to an anode side of the diode, and a high resistance device (R13) inserted between a cathode side of the diode and ground. The Examiner then went to Carroll to replace the resistors with transistors for working as a high resistance by a positive potential being applied thereto.

However, in Murtojarvi, a bias voltage is supplied to a diode (D3C) through resistors (R11, R12, R13), similarly to the prior art shown in Fig. 11 of the present application.

The present invention utilizes not resistors but first and second transistors working as the constant current source in order to control the bias current of the diode. That is, the first transistor connected to the anode of diode supplies constant current to the diode when a positive potential is applied thereto. As a result, the sum of the RF signal and the constant current flows through the diode. The second transistor connected to the cathode of the diode extracts the constant current from the current outputted from the cathode of the diode. The extracted constant current flows into ground via the second transistor. As a result, the rectified RF signal does not flow into ground via the second transistor and is outputted as it is.

When a positive voltage is respectively applied to the bases of the first and second transistors, a constant current corresponding to the positive voltage flows between an emitter and collector in the first and second transistors. In this way, the currents flowing through the first and second transistors are respectively limited to the constant value. In other words, each of the first and second transistors has a very high resistance for the current exceeding the constant value. As a result, as shown in Figs. 3A-3C, the present invention can convert the RF signal into a D.C. potential efficiently.

Therefore, we believe that amended Claim 1 has an inventive step over Murtojarvi.

Carroll simply states in column 1, lines 20-24 that transistor M1 of Fig. 1 may be thought of as an equivalent resistor as shown in Fig. 2.

Thus, Applicants believe Claim 1, as amended, patentably distinguishes over the art of record. Likewise, Claims 2 and 4, which ultimately depend from Claim 1, are also believed to patentably distinguish over the art of record. Reconsideration of the rejection is respectfully requested.

ALLOWABLE SUBJECT MATTER

Claims 5-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 5-7 ultimately depend from Claim 1 and are believed to still be allowable.

Claims 3 and 10-15 are allowed.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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